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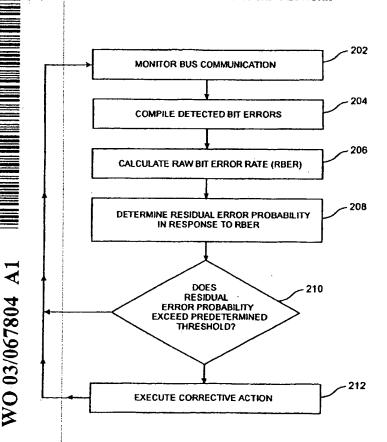
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before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Tite: RESIDUAL ERROR HANDLING IN A CAN NETWORK

80 Shurtleff Road, North Eastham, MA 02651 (US).



(57) Abstract: A method and apparatus for improving communication throughout a network is disclosed. The network includes a module capable of transmitting messages in response to a change of state. Bit errors transmitted within network are detected and a detected bit error rate is calculated. A residual, i.e., undetected, error probability is determined in response to the detected bit error rate. Corrective action towards reducing the effects of the residual errors is taken, e.g., retransmission of messages, in response to the residual error probability exceeding a predetermined threshold.

INTERNATIONAL SEARCH REPORT

PCT/US 03/04027

A. CLAS	SIFICATION OF SUBJECT MATTER		
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According	to International Patent Classification (IPC) or to both national class	sification and IPC	
B. FIELDS	S SEARCHED		<u> </u>
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Documenta	ation searched other than minimum documentation to the extent th	nat such documents are included in the fields s	earched
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	nternal, INSPEC, COMPENDEX	a base and, where practical, search terms used	3)
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C. DOCUM	ENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the	relevant passages	Relevant to claim No.
			Newvara to Gaim No.
X	US 5 828 672 A (TURCOTTE ERIC	ET ALL	1 2 5 5
,,	27 October 1998 (1998–10–27)	LT AL)	1,3,5-9, 11.
	(330 10 2.)		13-21,
			23,
			25-29,
			31,
			33-37,
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			4,12,24, 32,40
	column 1, line 13 - line 18		02,70
	column 2, line 22 - line 39 column 4, line 11 - line 27		
	column 4, line ll - line 27		
	column 6, line 30 - line 56 claim 1		
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X Furth	er documents are listed in the continuation of box C.	Patent family members are tisted in	n annax.
* Special cal	egories of cited documents:	*T later document published after the Inten	national filing date
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INTERNATIONAL SEARCH REPORT

Internation Application No
PCT/US 03/04027

ategory *	ation) DOCUMENTS CONSIDERED TO BE RELEVANT	<u> </u>
	Citation of document, with indication, where appropriate, of the relevant pessages	Relevant to claim No.
X	US 5 835 507 A (WU JENG-JYE ET AL) 10 November 1998 (1998-11-10) column 1, line 6 - line 29 column 1, line 45 - line 50 column 2, line 7 - line 42 column 3, line 1 - line 19 column 4, line 14 - line 20 column 4, line 46 - line 59	1-3, 5-11, 13-16, 29-31, 33-39, 41-44
Y	DE 37 19 283 A (BOSCH GMBH ROBERT) 22 December 1988 (1988-12-22) page 2, line 58 - line 62 page 3, line 50 - line 53 page 4, line 3 - line 6 page 5, line 37 - line 38	4,12,24, 32,40
4	JOACHIM CHARZINSKI: "Performance of the Error Detection Mechanisms in CAN" PROCEEDINGS OF THE 1ST INTERNATIONAL CAN CONFERENCE, September 1994 (1994-09), pages 1.20-1.29, XP002242563 Mainz, Germany cited in the application the whole document	1-44
	EP 1 107 500 A (MARCONI COMM LTD.) 13 June 2001 (2001-06-13) column 2, line 7 - line 20	1-44
		·

INTERNATIONAL SEARCH REPORT

PCT/US 03/04027

	 					00,0402,
	nt document search report		Publication date		Patent family member(s)	Publication date
US 5	828672	A	27-10-1998	AU	7458998 A	24-11-1998
				BR	9808699 A	11-07-2000
				WO	9849800 A1	05-11-1998
				US	6073257 A	06-06-2000
US 5	B35507	A	10-11-1998	NONE		
DE 3	719283	Α	22-12-1988	DE	3719283 A1	22-12-1988
				DE	3851881 D1	24-11-1994
				WO	8810038 A1	15-12-1988
	-			EP	0335917 A1	11-10-1989
			•	JP	2500234 T	25-01-1990
				JP	2598502 B2	09-04-1997
				KR	9210852 B1	19-12-1992
·				US	5111460 A	05-05-1992
EP 1	107500	Α	13-06-2001	GB	2357230 A	13-06-2001
				ΑU	7210600 A	14-06-2001
				CN	1306369 A	01-08-2001
				EP	1107500 A2	13-06-2001
				JP	2001203674 A	27-07-2001
				NO	20006298 A	12-06-2001
				US	2001021986 A1	13-09-2001